

Remarks

Claims 1-7 were pending in this Application. Claims 8-16 were previously Canceled by the Preliminary Amendment Filed on 8 March 2004. Claims 1-6 have been Rejected; Claim 7 has been Objected to. This Amendment Cancels Claims 1-6, Amends Claim 7 to rewrite it in Independent format incorporating the limitations of former base Claim 1 and intervening Claims 2, 3, and 4, and Adds Dependent Claims 17-23 to Depend from Rewritten Claim 7.

DETAILED EXAMINER'S COMMENTS
Claim Rejections -35 USC § 112

The Examiner has Rejected Claims 1-7 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Specifically

The Examiner states that

The claim language "the thin film substrate heterostructure" recited in claim 1 lacks antecedent basis (claim 1, lines 12-13). For purposes of examination, the claimed language is interpreted to mean "composite thin films." The claim language "composite thin films" is recited in the preamble of claim 1.

Response

In Canceling Claim 1 and Amending Claim 7 in Independent format to include all the limitations of previous base Claim 1 and Intervening Claims 2, 3 and 4, Applicant has Amended Claim 7 to include the language "composite thin films" in lieu of the previous language "the thin film substrate heterostructure." Such Amendment is permissible since the new language was previously recited in the preamble of Claim 1 and, hence, adds no new matter.

DETAILED EXAMINER'S COMMENTS
Claim Rejections - 35 USC § 103

The Examiner has Rejected Claims 1-6 under 35 U.S.C. § 103(a) as being unpatentable over Tomita (US 5,468,514) in view of Huang et al. (U.S. Patent Number 6,133,086).

Response

Applicant has Canceled Claims 1-6 Obviating the Examiner's Rejection.

DETAILED EXAMINER'S COMMENTS

Allowable Subject Matter

The Examiner has indicated that Claim 7 is Objected to as being Dependent upon a Rejected Base Claim, but would be allowable if rewritten in Independent form including all of the limitations of the Base Claim and any Intervening Claims.

Response

Applicant is grateful to the Examiner for the indication of Allowable Subject Matter and has rewritten Claim 7 in Independent Format including all of the limitations of previous Base Claim 1 and Intervening Claims 2, 3 and 4.

Additional Claims

Applicant takes this opportunity to further limit Claim 7 which has been rewritten in Independent format by Adding Claims 17-23. Each of Added Claims 17-23 merely adds a limitation found in the Example at paragraph [0039] of the Substitute Specification Filed on 8 March 2004. Claim 17 limits the temperature in annealing step "j" to about 750° C as described in paragraph [0039] line 9. Claim 18 limits the conduct of annealing step "j" to an oxygen environment as described in paragraph [0039] line 9. Claim 19 further limits the conduct of annealing step "j" to an oxygen environment at about 750° C as described in paragraph [0039] line 9. Claim 20 limits step "a" specifying the use of precursor compounds tantalum ethoxide and aluminum nitrate as described in paragraph [0039], line 3. Claim 21 limits step "a" specifying the use of acetic acid and 2-methoxyethanol are selected as the solvents as described in paragraph [0039], line 4. Claim 22 further describes the method for fabricating composite thin films of claim 7 wherein said composite thin films have an average surface roughness less than 0.3 mm. as described in paragraph [0039], line 14. Claim 23 further describes the method for fabricating composite thin films of claim 7 wherein said composite thin films exhibit a dense microstructure and very fine grain size as described in paragraph [0039], lines 14 and 15.

Amendment to the Drawings

As a result of the changes to rewrite Claim 7 in Independent format Claim 7 to add the steps previously recited in Base Claim 1 and Claims 2, 3, 4 and 7 into Claim 7, the Original Figure 1 previously submitted does not reflect the novel aspects of Applicant's Invention; therefore, Applicant has Corrected Figure 1 to add steps g-j as Claimed in Claim 7. The increase in size of Figure 1 requires that Figure 1 and Figures 2(a) and 2(b) be shown on separate sheets. Replacement Sheets 1 of 4 and 2 of 4 are attached after page 8 of this paper. Upon entry of the Corrected Sheets, please Cancel Original Sheet 1. Original Sheets labeled Sheet 2 of 3 and Sheet 3 of 3 become Sheets 3 of 4 and 4 of 4 respectively.

Conclusion


Applicant believes that the Amendments made herein respond to each and every one of the Examiner's Objections and Rejections and are such as to place the Application into Condition for Allowance. Applicant further respectfully requests that a timely Notice of Allowance be issued in this case.

Since Applicant has previously paid for 20 Total Claims and 3 Independent Claims and the Claims remaining in the Application are only 8 Total Claims and 1 Independent Claim; Applicant does not believe there is any Fee due for this Amendment other than the Fee due for a one month extension. Applicant has previously authorized the Commissioner to charge any fees due to Deposit Account 19-2201, U.S. Army Materiel Command.

The Examiner is invited to telephone the undersigned at the local telephone number given below if, after considering this amendment, the Examiner is of the opinion that the Amendments made by Applicant have not resolved all outstanding issues in this case and brought the case into Condition for Allowance.

Respectfully submitted,

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DATE


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Amendments to the Drawings:

Please Amend the Drawings to substitute Replacement Figure 1 for original Figure 1 and Cancel Original Figure 1. Replacement Sheets with Figure 1 and Figures 2(a) and 2(b) on separate sheets due to the increased size of Figure 1 are attached after page 8 of this paper.